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| 09/868,360      | 01/03/2002  | Ryuichi Ugajin       | 09794353-0016       | 8558             |

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EXAMINER

NGUYEN, THINH T

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2818

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

09/868,360

Applicant(s)

UGAJIN ET AL.

Examiner

Thinh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11, 21-23 and 27-36 is/are allowed.
- 6) ☐ Claim(s) 12, 14, 15, 20 and 24-26 is/are rejected.
- 7) ☐ Claim(s) 13, 14 and 16-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED OFFICE ACTION**

### **Specification**

1. The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant cooperation is requested in correcting any errors of which the applicant may become aware in the specification.

### **Claim Objections**

2. claims 14 is objected to for non-compliant of 35 U.S.C. 112 second paragraph:  
claim 12 recited – “ said fractal dimension of said magnetic material is not smaller than 2.5. “--  
2.5 of what ?.  
Correction or clarification is required.
3. Claims 20 is objected to for the following informalities:  
Claim 20 is a dependant claim but the recitation is missing the claim it depends on.  
Correction is required.

### **Claim Rejections - 35 USC § 102**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(b/e) that form the basis for the rejections under this section made in this office action.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 12,15 are rejected under 35 U.S.C. 102(b) as being anticipated by Niklasson et al.

(Physical Review letters 25 April 1988 , volume 60 number 17) .

#### REGARDING CLAIM 12

Niklasson et al. ( column 2 line 1 page 1735, fig 1 ,page 1735 ) disclose a ferromagnetic fractal-coupled structure characterized in comprising a magnetic material configured to have self-similarity.

#### REGARDING CLAIM 15

Niklasson et al. ( column 2 line 1 page 1735, fig 1 ,page 1735 ) a fractal-coupled structure characterized in being configured to have self-similarity and being applied with random magnetic fields.

### Claim Rejections - 35 USC § 103

6. The following is a quotation of U.S.C. 103(a) which form the basis for all obviousness rejections set forth in this office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14,20,24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Niklasson et al. (Physical Review letters 25 April 1988 , volume 60 number 17) in view of further remark.

To expedite the prosecution of the Application the Examiner assume that the applicants will correct claims 14,20 to overcome the Objections by the examiner and will examine claims 14 and 20 as best as it can be understood by the examiner.

#### REGARDING CLAIM 14

Niklasson et al. disclose all the invention of a ferromagnetic structure except for size of the fractal dimension. This feature, however, is considered obvious since it has been held that where the general conditions of a claim are disclosed in prior art. discovering the optimum or workable range is within routine skill of a person with ordinary skill in the art.

#### REGARDING CLAIM 20,24-26

Niklasson et al. disclose all the invention of a ferromagnetic structure except for the use of this structure in an electronics or semiconductor device.

However, the use of ferroelectric structure for electronics or semiconductor devices or information storages devices is old and well known in the art.

It would have been obvious to one of ordinary skill in the art the time the invention was made to use the teachings by Niklasson et al. and his routine design skill to come up with the invention of claim 20,24-26 .

A person skilled in the art at the time the invention was made would have been able to use the teachings by Niklasson et al. and his own skill and come up with the invention of claim 20,24-26 without any special teachings.

**ALLOWABLE SUBJECT MATTER**

8. Claims 1-11 are allowed. Claims 1-11 are allowed because prior art of record fails to teach a method that has the limitations:

-- "controlling phase transition of a fractal-coupled structure characterized in controlling phase transition by controlling fractal dimension of a fractal-coupled structure overall or locally. "-- as recited in claim 1.

9. Claims 21-23 are allowed. . Claims 21-23 are allowed because prior art of record fails to teach a method that has the limitations as recited in claims 21 , 22.

10. Claims 27-36 are allowed. . Claims 27-36 are allowed because prior art of record fails to teach an information storage medium or information processing device that has the limitations as recited in claims 27-36.

11. Claims 13,16-19 are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

Claim 13,16-19 are considered allowable since the prior fails to teach a structure that has the limitations as recited in those claims

12. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and the page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

13. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the day of this letter. Failure to respond within the period for response will cause the application to be abandoned (see M.P.E.P. 710.02(b)).

14. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d) which papers have been placed of record in the file.

### CONCLUSION

15. The prior arts made of record and not relied upon are considered pertinent to applicant disclosure: Zook (US patent 3,696,346) discloses a beam addressable memory; Ovshinsky ( US patent 5,296,716) disclose a phase change memory device.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thinh T Nguyen whose telephone number is 571-272-1790.

The examiner can normally be reached on Monday-Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached at 571-272-1787.

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The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Thinh T. Nguyen



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David Nelms  
Supervisory Patent Examiner  
Technology Center 2800